

Claims 1 and 7 require that the flange 26 of the crossover member 14 of the ball nut assembly 10 have at least one deformed portion 30 and/or 32 contacting the undercut wall 24 of the outer surface 18 of the ball nut 12 of the ball nut assembly 10. With respect to claim 1, the examiner, citing column 4, lines 15-29, alleges that the flange 37 and/or 38 of Welling defines a deformed portion contacting the undercut wall 30a of the ball nut and that the flange is deformed during assembly of the ball nut and crossover member. With respect to claim 7, the examiner reiterates that the flange 37 and/or 38 defines a deformed portion contacting the undercut wall 30a of the ball nut. Applicants respectfully disagree. In Welling, it is the resilient deformable side and end walls 35 and 36, and not the flange 37 and/or 38, which resiliently deform to allow passage of the button 13 through the opening 12 (see column 4, line 17). The side and end walls 35 and 36 are resiliently deformable because of the rectangular recess or well 34 in the button 13 (see column 4, lines 15-18). The flange 37 and/or 38 snaps into place in the recesses 30 and 32 automatically when the button 13 is inserted into the opening 12 (see column 4, lines 23-29). A flange which snaps into place against an undercut wall 24 is not a flange which has at least one deformed portion contacting the undercut wall as required by Applicants' claim 1. Further, there is no teaching that the side and end walls 35 and 36 of Welling are under any deformation when the flange 37 and/or 38 snaps into place because such side and end walls 35 and 36 have been described as being resiliently deformable and (see column 4, lines 55-61) as springing back when the flange 37 and 38 snaps into place and contacts the undercut wall of the ball nut. Springing back indicates that the side and end walls 35 and 36 are in a relaxed (and non-deformed) state when the flange 37 and/or 38 contacts the undercut wall 30a. Applicants' claim 1 requires that the flange have at least one deformed portion contacting the undercut wall of the ball nut. Welling does not teach, suggest, or describe this. An advantage of Applicants' claimed design is that a deformed flange provides a rigid attachment of the crossover member 14 to the ball nut 12. The crossover member of Welling is non-rigidly attached to the ball nut because of the resilient side and end walls 35 and 36. During operation, the button 13 (crossover member) of Welling can work itself loose, cause jamming of the balls, and even pop out. Welling does suggest optionally locking the button 13 permanently in place using an epoxy (see column 4, lines 39-42), wherein such additional epoxy step is avoided in Applicants' claimed design.

Claim 13 requires the step of deforming the flange 26 of the crossover member 14 of the ball nut assembly 10 creating a staked portion of the flange 26 which contacts the undercut wall 24 of the outer surface 18 of the ball nut 12. With respect to claim 13, the examiner alleges that Welling deforms the flange creating a staked portion of the flange which contacts the undercut wall of the ball nut, that the step of deforming occurs during the insertion stage, that a staked portion is defined as a means of securing the crossover member to the ball nut, that this immediately occurs after the crossover member is inserted into the slot, and that the deformable sidewalls and flange are received in the recessed groove defined by the ledge and undercut wall. Applicants respectfully disagree. In Welling, as previously discussed, the flange is not deformable, the sidewalls are resiliently deformable, but the sidewalls are not deformed when the flange contacts the undercut wall, and Applicant's previous remarks concerning the patentability of claims 1 and 7 over Welling are herein incorporated by reference. Further, deforming a flange so as to create a staked portion requires a specific kind of deforming which is deforming by staking such as through the use of Applicants' stake punch 68. There is nothing resilient about deforming by staking, and Welling does not teach, suggest, or describe deforming by staking.

The examiner's rejection of claims 6 and 12 as being "obvious", under 35 U.S.C. 103, is respectfully traversed. The examiner rejects these claims as being unpatentable over Welling. Claim 6 depends from claim 1, and claim 12 depends from claim 7. Applicants' previous remarks concerning the patentability of claims 1 and 7 over Welling are herein incorporated by reference.

Inasmuch as each of the rejections has been answered by the above remarks, it is respectfully requested that the rejections be withdrawn, and that this application be passed to issue.

Respectfully submitted,

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Serial No.: 10/001,715
Attorney Docket No.: DP-305919
Amendment

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